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ABSTRACT

Developed by the Initial Learning in Mainstreaming Project, the manual presents an instructional program to teach mainstreamed handicapped elementary school students the principle of least common denominators in working with fractions. In addition to detailed teaching instructions, the manual includes tests, worksheets, and pages to be made into transparencies for projection. (DLS)

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LEAST COMMON DENOMINATOR

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Transparency #1 - Rules - Least Common Denominator

Transparency #2, #3, #4 - Worksheets #1-#8

Transparency #5 - Renaming Rules

Transparency #6 - Renaming using step 1 - Worksheet #9 - sec. 1

Transparency #7 - Renaming using step 2 - Worksheet #9 - sec. 2

Transparency #8 - Renaming using step 3 - Worksheet #9 - sec. 3

Worksheets #10-#12

Blank Transparency - Worksheet #13

Renaming Review Worksheets - #14 - #18

Addition and Subtraction Worksheets - #19 - #20

Review Worksheets - L. C. D. - #21-22 (Step 1)

#23-24 (Step 2)

#25-26 (Step 3)

Record all worksheets and tests on the record forms provided.

The "Least Common Denominator"

The intent of this lesson is to teach children (1) what the "Least Common Denominator" is, (2) how to find it, and (3) how to rename the fraction by using this common denominator.

This is prerequisite to adding and subtracting fractions without common denominators. This will be done BY

(1)	Instructions for the teacher.
(2)	A structure sheet containing steps for children to follow. (Found on the inside cover of the student workbook)
(3)	Blank and example transparencies for teacher use when explaining process or checking answers. (The blackboard may be used if you prefer)
(4)	Worksheets
(5)	Test

Teacher: You may use your own definition of least common denominator. In giving a definition consider the following three points.

(1) That <u>common</u> means "the same". (Each fraction must have the same number underneath the line, or as its denominator.)

(2) That the <u>least</u> common denominator is always the <u>smallest</u> number into which the denominators of the fractions concerned with will divide evenly.

(3) That it is necessary in any problem where you are adding or subtracting fractions that do not have the same number on bottom .

Sample definitions might be:

Sample Definitions

A common denominator is when all of the fractions in a problem have the same number on the bottom.

A least common denominator is when the number on the bottom is the smallest number that can be on the bottom and still have the same number on the bottom of all the fractions.

PROCEDURE

(1) Discuss with children: (This information is on the inside cover of their books)

How do we find the "LEAST COMMON DENOMINATOR"?

To find the "least common denominator" of two or more fractions..... WE

STEPS

(1) Try to divide the largest number on the bottom of the fraction by the other number(s) on the bottom.

If the answer comes out even the least common denominator is the largest number on the bottom.

If (1) won't work try (2)

(2) Multiply the largest number on the bottom by 2,3, 5, or 7 and see if you can get a number the other number(s) on the bottom will divide evenly into.

When you find such a number it will be the least common denominator.

If neither (1) or (2) will work try (3)

(3) Multiply the bottom numbers together. The answer will be a common denominator. (It may not be the least common denominator but it will allow them to work the problem.)

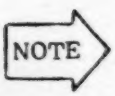
Teacher: After going over the steps using transparency #1, use transparency #2 to illustrate the steps. A key to the problems follows. (IN EACH CASE GO THROUGH THE STEPS IN ORDER TILL YOU COME TO THE STEP THAT WORKS)

Transparency #2	Problem 1 works out with step 1
	Problem 2 works out with step 2
	Problem 3 works out with step 3
Transparency #3	Problem 1 works out with step 2
	Problem 2 works out with step 1
	Problem 3 works out with step 3
Transparency #4	Problem 1 works out with step 3
	Problem 2 works out with step 2
	Problem 3 works out with step 1

ASK FOR QUESTIONS

THEN

do worksheet #1 in the following manner. Assign <u>one</u> problem and correct it, assign another problem and correct it, etc.



Worksheet #1 has all step #1 problems. Worksheet #2 has all step #2 problems and worksheet #3 has all step #3 problems. If the class needs more help reuse appropriate problems from the transparencies or problems from the worksheets for examples. Beginning with worksheet #4 the problem types are mixed. When using these worksheets be careful to note if students are missing Type I (step 1), Type II (step 2) or Type III (step 3) problems so additional help can be given on the specific process involved for each type. In the back of the student workbook on different colored paper are additional worksheets for each type problem in case a given student needs more practice on any one given type of problem.

THEN

Continue with worksheets #2 and #3 in the same manner. Show how you are following the steps as outlined on their cards. Use worksheets #21 to #26 as needed for additional practice.

⇩ NOTE ⇩

At the end of the student workbook are two worksheets on white paper that involve the solution of addition and subtraction fraction problems. While it is beyond the scope of this instructional program to teach the addition and subtraction of fractions, they are included so the teacher may illustrate, if she wishes, why the least common denominator is an important concept. If instruction in fractions is necessary the teacher can accomplish this by adding a step 5 to transparency #5 which says WORK THE ADDITION OR SUBTRACTION OF THE FRACTION BY ADDING OR SUBTRACTING THE TOP NUMBER AND LEAVING THE BOTTOM NUMBER THE SAME. A few problems from the worksheet may be used to illustrate this 5th step. Remedial filmstrips with accompanying tapes may be available for this purpose from the Mainlining Adequacy Project, School District #148, Grace, Idaho 83241 for adding and subtracting fractions on an at cost basis. State whether you desire tapes to have 50HZ, 1000HZ or audible advance tones when ordering.

IMPORTANT

While doing this process of assign one problem, check one problem, ask by a show of hands after each problem how many got the problem correct. Notice a couple of students who do not get the problem correct and check to see the nature of their errors while the class is doing the next problem. Use this information to illustrate, etc. as you correct future problems. Be careful not to embarrass students not doing well by mentioning names and etc. As time goes on, more of the class should begin to understand the process until such a time as more than one problem can be assigned at a time (when all but 1 or 2 students understand) and just answers may be used in correcting (see key section of manual for answers). Great care should be taken, however, not to start correcting just with answers alone too soon.

VERY IMPORTANT

When correcting and helping a student and you notice that the process is being done correctly but that the problem is being missed for other reasons such as facts etc. be sure to point out to the student that he/she knows how to do the problem but is missing it because of these other things.

You may explain, after a couple of problems involving only step 1, that with step 1 many times you can just figure it out in your head, like when low even or odd numbers are involved i.e. 2 and 4 or 3 and 9 etc.

Present Transparency #5 and go over the rules. Use Transparencies #6, #7 and #8 to illustrate the working of the problem. Transparency #6 has a least common denominator with step 1. Transparency #7 has a least common denominator with step 2 and Transparency #8 has a common denominator with step 3. Be sure to use the rule steps of transparency #5 when working the problems.

Have the children watch the screen or blackboard as you reinforce the concepts by illustrating problem A for them. This problem has been done on their worksheet also. They watch the teacher, as well as their own paper. Then have them do problem B by themselves. Continue through worksheet # 9 in this manner.

AFTER

checking to make sure they understand re-naming fractions, use worksheets #10 through 12. If necessary use the assign one problem correct one problem method used earlier until all but a few of the class understand the process.

With worksheet #13 use this procedure: Have the children do problems A by themselves. Then check problem A with them by working it out on a transparency or blackboard. When you feel sure that they understand the concept have them do the next 4 problems by themselves. Repeat this process with B and C. Use worksheets #14 to #18 as needed for practice and later review. Finally, give the TEST offering no further help with computation. It would be a good idea to also use the test at a later date to see how well students remember the concepts.

Least Common Denominator

Worksheet Record Form

Student Names	✓ if Problem			% Score Process if Low Total					Other Worksheets				Comments
	Worksheet #1 - Step 1 Prob. 9-10	Worksheet #2 - Step 2 Prob. 9-10	Worksheet #3 - Step 3 Prob. 9-10	Worksheet #4	Worksheet #5	Worksheet #6	Worksheet #7	Worksheet #8					

Worksheet Record Form

✓ if problem (less than 80%) Score process for problem scores on * worksheets

Student Names (Total / Process)	Worksheet #9- L.C.D.	Worksheet #9-Rename	Worksheet* #10-L.C.D.	Worksheet* #10-Rename	Worksheet #11-L.C.D.	Worksheet #11-Rename	Worksheet #12-L.C.D.	Worksheet #12-Rename	Worksheet #13-Prob.A L.C.D.	Worksheet #13-Prob.A Rename	Worksheet #13-Prob.B L.C.D.	Worksheet #13-Prob.B Rename	Worksheet #13-Prob.C L.C.D.	Worksheet #13-Prob.C Rename	Worksheet* #13-Sec.C L.C.D.	Wdrksheet* #13-Sec.C Rename
	✓															

orksheet Record Form

✓ if problem (less than 80%) Score process for problem scores on * worksheets

Total / Process	Worksheet* #14-L.C.D.	Worksheet* #14-Rename	Worksheet #15-L.C.D.	Worksheet #15-Rename	Worksheet #16-L.C.D.	Worksheet #16-Rename	Worksheet* #17-L.C.D.	Worksheet* #17-Rename	Worksheet #18-L.C.D.	Worksheet #18-Rename	Worksheet #19-L.C.D.	Worksheet #19-Rename	Worksheet* #20-L.C.D.	Worksheet* #20-Rename	Others	
Student Names																

Total / Process	Least Common D Total/Proces	Type 1 (Step 1)	Type 2 (Step 2)	Type 3 (Step 3)	Renaming Total/Process		Comments
tudent Names							

Transparency

7

STEPS

(1) Try to divide the largest number on the bottom of the fraction by the other number(s) on the bottom.

If the answer comes out even, the least common denominator is the largest number on the bottom.

If (1) won't work try (2)

(2) Multiply the largest number on the bottom by 2, 3, 5, or 7 and see if you can get a number the other number(s) on the bottom will divide evenly into. When you find such a number it will be the least common denominator.

If neither (1) or (2) will work try (3)

(3) Multiply the bottom numbers together. The answer will be a common denominator.

Transparency

2

Problem 1

2/4 and 3/12

Problem 2

2/5 and 3/8

Problem 3

7/8 and 9/13

3

Problem 1

2/3 and 1/7

Problem 2

6/8 and 5/24

Problem 3

5/9 and 2/11

4

Problem 1

5/8 and 7/9

Problem 2

3/7 and 1/6

Problem 3

2/3 and 5/12

5

Rule Steps for Renaming Fractions

1. Find the least common denominator.

2. Multiply the top of the fraction by the number of times the bottom will go into the least common denominator.

3. Put the number from step 2 on the top of the new fraction and the least common denominator on the bottom.

4. Do this for each fraction involved in the problem.

6

2/5 and 3/10

7

1/5 and 2/3

8

2/9 and 5/13

LEAST COMMON DENOMINATOR

Worksheet #1

Name_____ Date_____

Step 1

> Try to divide the largest number on the bottom of the fraction by the other number(s) on the bottom. If the answer comes out even the least common denominator is the largest number on the bottom.

Find the least common denominator (L.C.D.) for the following fractions:

Example → $\frac{2}{3}$ and $\frac{4}{6}$ ____ → 6 (L.C.D.)

(1) $\frac{1}{4}$ and $\frac{3}{12}$ _____ (L.C.D.)

(2) $\frac{3}{10}$ and $\frac{2}{5}$ _____ (L.C.D.)

(3) $\frac{3}{6}$ and $\frac{5}{12}$ _____ (L.C.D.)

(4) $\frac{5}{8}$ and $\frac{1}{2}$ _____ (L.C.D.)

(5) $\frac{3}{7}$ and $\frac{5}{21}$ _____ (L.C.D.)

(6) $\frac{5}{18}$ and $\frac{3}{6}$ _____ (L.C.D.)

(7) $\frac{4}{5}$ and $\frac{3}{20}$ _____ (L.C.D.)

(8) $\frac{2}{7}$ and $\frac{4}{14}$ _____ (L.C.D.)

(9) $\frac{3}{4}$ and $\frac{1}{2}$ _____ (L.C.D.)

(10) $\frac{7}{15}$ and $\frac{1}{5}$ _____ (L.C.D.)

LEAST COMMON DENOMINATOR

Worksheet #2

Name_____ Date_____

Step 2

> Multiply the largest number on the bottom by 2,3,5, or 7 and see if you can get a number the other number(s) on the bottom will divide evenly into. When you find such a number it will be the least common denominator.

Find the Least Common Denominator (L.C.D.) of the following fractions.

Example (1) $\frac{4}{6}$ and $\frac{1}{9}$ ____ 18 (L.C.D.) (2) $\frac{1}{10}$ and $\frac{4}{6}$ ____ 30 (L.C.D.)

(1) $\frac{1}{15}$ and $\frac{1}{2}$ ____ (L.C.D.)

(2) $\frac{3}{4}$ and $\frac{2}{10}$ ____ (L.C.D.)

(3) $\frac{5}{6}$ and $\frac{2}{4}$ ____ (L.C.D.)

(4) $\frac{3}{5}$ and $\frac{1}{6}$ ____ (L.C.D.)

(5) $\frac{1}{8}$ and $\frac{2}{6}$ ____ (L.C.D.)

(6) $\frac{3}{18}$ and $\frac{1}{4}$ ____ (L.C.D.)

(7) $\frac{3}{4}$ and $\frac{11}{14}$ ____ (L.C.D.)

(8) $\frac{3}{12}$ and $\frac{4}{9}$ ____ (L.C.D.)

(9) $\frac{2}{15}$ and $\frac{3}{6}$ ____ (L.C.D.)

(10) $\frac{2}{16}$ and $\frac{5}{6}$ ____ (L.C.D.)

LEAST COMMON DENOMINATOR

Worksheet #3

Name_____ Date_____

Step 3

> Multiply the bottom numbers together. The answer will be a common denominator. (It may not be the least common denominator but it will allow you to work the problem.

Example → $\frac{2}{7} \times \frac{3}{5}$ ____ $\frac{}{35}$ (C.D.)

(1) $\frac{1}{7}$ and $\frac{2}{5}$ ____ (C.D.)

(2) $\frac{3}{9}$ and $\frac{2}{4}$ ____ (C.D.)

(3) $\frac{5}{8}$ and $\frac{3}{7}$ ____ (C.D.)

(4) $\frac{1}{3}$ and $\frac{5}{8}$ ____ (C.D.)

(5) $\frac{6}{9}$ and $\frac{5}{7}$ ____ (C.D.)

(6) $\frac{3}{11}$ and $\frac{2}{6}$ ____ (C.D.)

(7) $\frac{1}{7}$ and $\frac{3}{13}$ ____ (C.D.)

(8) $\frac{5}{8}$ and $\frac{7}{9}$ ____ (C.D.)

(9) $\frac{2}{14}$ and $\frac{3}{5}$ ____ (C.D.)

(10) $\frac{2}{6}$ and $\frac{6}{7}$ ____ (C.D.)

LEAST COMMON DENOMINATOR

Worksheet #4

Name_____ Date_____

Find the lowest common denominator or a common denominator using one of the three steps.

(1) $\frac{5}{9}$ and $\frac{7}{18}$ _____

(2) $\frac{1}{6}$ and $\frac{3}{11}$ _____

(3) $\frac{9}{15}$ and $\frac{3}{3}$ _____

(4) $\frac{1}{15}$ and $\frac{3}{24}$ _____

(5) $\frac{3}{8}$ and $\frac{6}{56}$ _____

(6) $\frac{1}{4}$ and $\frac{3}{10}$ _____

(7) $\frac{2}{3}$ and $\frac{5}{12}$ _____

(8) $\frac{4}{10}$ and $\frac{1}{5}$ _____

(9) $\frac{3}{4}$ and $\frac{5}{13}$ _____

(10) $\frac{2}{8}$ and $\frac{1}{48}$ _____

LEAST COMMON DENOMINATOR

Worksheet #5

Name_____ Date_____

Find the lowest common denominator or a common denominator using one of the three steps.

(1) $\frac{2}{3}$ and $\frac{7}{8}$ _____

(2) $\frac{3}{4}$ and $\frac{9}{20}$ _____

(3) $\frac{2}{5}$ and $\frac{10}{25}$ _____

(4) $\frac{2}{6}$ and $\frac{1}{2}$ _____

(5) $\frac{1}{6}$ and $\frac{3}{8}$ _____

(6) $\frac{1}{4}$ and $\frac{7}{9}$ _____

(7) $\frac{4}{7}$ and $\frac{8}{21}$ _____

(8) $\frac{3}{5}$ and $\frac{7}{15}$ _____

(9) $\frac{1}{9}$ and $\frac{5}{18}$ _____

(10) $\frac{1}{13}$ and $\frac{5}{24}$ _____

LEAST COMMON DENOMINATOR

Worksheet #6

Name_____ Date_____

(1) $\frac{4}{7}$ and $\frac{3}{63}$ _____

(2) $\frac{1}{8}$ and $\frac{4}{9}$ _____

(3) $\frac{2}{5}$ and $\frac{8}{9}$ _____

(4) $\frac{3}{4}$ and $\frac{8}{12}$ _____

(5) $\frac{1}{5}$ and $\frac{3}{14}$ _____

(6) $\frac{1}{4}$ and $\frac{4}{36}$ _____

(7) $\frac{5}{6}$ and $\frac{2}{18}$ _____

(8) $\frac{3}{6}$ and $\frac{5}{18}$ _____

(9) $\frac{3}{7}$ and $\frac{7}{11}$ _____

(10) $\frac{3}{5}$ and $\frac{5}{20}$ _____

LEAST COMMON DENOMINATOR

Worksheet #7

Name_____ Date_____

(1) $\frac{3}{8}$ and $\frac{1}{2}$ _____

(2) $\frac{1}{3}$ and $\frac{4}{14}$ _____

(3) $\frac{5}{19}$ and $\frac{4}{8}$ _____

(4) $\frac{2}{9}$ and $\frac{4}{72}$ _____

(5) $\frac{2}{6}$ and $\frac{3}{24}$ _____

(6) $\frac{1}{3}$ and $\frac{3}{18}$ _____

(7) $\frac{4}{21}$ and $\frac{3}{9}$ _____

(8) $\frac{1}{7}$ and $\frac{3}{9}$ _____

(9) $\frac{5}{9}$ and $\frac{4}{81}$ _____

(10) $\frac{1}{4}$ and $\frac{3}{28}$ _____

LEAST COMMON DENOMINATOR

Worksheet #8

Name_____ Date_____

(1) $\frac{2}{3}$ and $\frac{4}{27}$ _____

(2) $\frac{1}{25}$ and $\frac{3}{4}$ _____

(3) $\frac{5}{8}$ and $\frac{3}{64}$ _____

(4) $\frac{4}{22}$ and $\frac{2}{3}$ _____

(5) $\frac{2}{9}$ and $\frac{3}{45}$ _____

(6) $\frac{3}{7}$ and $\frac{5}{8}$ _____

(7) $\frac{1}{4}$ and $\frac{3}{28}$ _____

(8) $\frac{5}{12}$ and $\frac{10}{15}$ _____

(9) $\frac{6}{16}$ and $\frac{7}{12}$ _____

(10) $\frac{3}{5}$ and $\frac{10}{35}$ _____

LEAST COMMON DENOMINATOR

Worksheet #9

Name_____ Date_____

Find the least common denominator and rename the fractions.

(A) $\frac{7}{8}$ and $\frac{1}{4}$ ____ $\frac{7}{8}$ and $\frac{2}{8}$

Step 1

(B) $\frac{5}{12}$ and $\frac{3}{4}$ ____ and
(L.C.D.)

(A) $\frac{8}{15}$ and $\frac{5}{6}$ ____ $\frac{16}{30}$ and $\frac{25}{30}$

Step 2 2x

(B) $\frac{3}{8}$ and $\frac{1}{6}$ ____ and
(L.C.D.)

(A) $\frac{2}{7}$ and $\frac{4}{9}$ ____ $\frac{18}{63}$ and $\frac{28}{63}$

Step 3 x

(B) $\frac{2}{11}$ and $\frac{1}{5}$ ____ and
(L.C.D.)

LEAST COMMON DENOMINATOR

Worksheet #10

Name_____ Date_____

Find the least common denominator and rename the fraction or fractions.

Ex. (1) $\frac{6}{25}$ and $\frac{2}{5}$ ____ 25 (L.C.D.) $\frac{6}{25}$ and $\frac{10}{25}$ ← THIS

Ex. (2) $\frac{2}{6}$ and $\frac{3}{9}$ (2x) ____ (L.C.D.) $\frac{6}{18}$ and $\frac{6}{18}$ ← THIS

or

Ex. (3) $\frac{1}{5}$ and $\frac{2}{7}$ (x) ____ 35 (L.C.D.) $\frac{7}{35}$ and $\frac{10}{35}$ ← THIS

or

(1) $\frac{7}{15}$ and $\frac{2}{3}$ ____ ____ and ____

(2) $\frac{3}{7}$ and $\frac{2}{14}$ ____ ____ and ____

(3) $\frac{4}{6}$ and $\frac{3}{4}$ ____ ____ and ____

(4) $\frac{3}{10}$ amd $\frac{2}{4}$ ____ ____ and ____

(5) $\frac{1}{7}$ and $\frac{3}{9}$ ____ ____ and ____

(6) $\frac{3}{20}$ and $\frac{3}{5}$ ____ ____ and ____

(7) $\frac{1}{24}$ and $\frac{5}{6}$ ____ ____ and ____

(8) $\frac{5}{10}$ and $\frac{2}{6}$ ____ ____ and ____

(9) $\frac{4}{21}$ and $\frac{3}{7}$ ____ ____ and ____

(10) $\frac{2}{3}$ and $\frac{1}{30}$ ____ ____ and ____

LEAST COMMON DENOMINATOR

Worksheet #11

Name_____ Date_____

Find the least common denominator and rename the fraction or fractions.

		L.C.D.		
(1)	$\frac{11}{18}$ and $\frac{3}{4}$	_____	_____ and _____	
(2)	$\frac{2}{5}$ and $\frac{6}{15}$	_____	_____ and _____	
(3)	$\frac{7}{9}$ and $\frac{2}{6}$	_____	_____ and _____	
(4)	$\frac{1}{7}$ and $\frac{3}{5}$	_____	_____ and _____	
(5)	$\frac{2}{3}$ and $\frac{4}{5}$	_____	_____ and _____	
(6)	$\frac{3}{9}$ and $\frac{2}{7}$	_____	_____ and _____	
(7)	$\frac{3}{8}$ and $\frac{2}{4}$	_____	_____ and _____	
(8)	$\frac{3}{7}$ and $\frac{1}{2}$	_____	_____ and _____	
(9)	$\frac{5}{8}$ and $\frac{4}{6}$	_____	_____ and _____	
(10)	$\frac{1}{3}$ and $\frac{3}{10}$	_____	_____ and _____	

LEAST COMMON DENOMINATOR

Worksheet #12

Name_____ Date_____

Find the least common denominator and rename the fraction or fractions.

		L.C.D.		
(1)	$\frac{2}{9}$ and $\frac{4}{5}$	_____	_____ and	_____
(2)	$\frac{3}{4}$ and $\frac{2}{5}$	_____	_____ and	_____
(3)	$\frac{5}{7}$ and $\frac{10}{21}$	_____	_____ and	_____
(4)	$\frac{4}{9}$ and $\frac{3}{6}$	_____	_____ and	_____
(5)	$\frac{2}{8}$ and $\frac{4}{7}$	_____	_____ and	_____
(6)	$\frac{7}{8}$ and $\frac{5}{6}$	_____	_____ and	_____
(7)	$\frac{1}{15}$ and $\frac{3}{10}$	_____	_____ and	_____
(8)	$\frac{3}{4}$ and $\frac{5}{9}$	_____	_____ and	_____
(9)	$\frac{5}{7}$ and $\frac{4}{5}$	_____	_____ and	_____
(10)	$\frac{4}{5}$ and $\frac{7}{8}$	_____	_____ and	_____

LEAST COMMON DENOMINATOR

Worksheet #13

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(A) $\frac{5}{9}$ and $\frac{3}{8}$ _____ _____ and _____

(1) $\frac{5}{6}$ and $\frac{3}{5}$ _____ _____ and _____

(2) $\frac{2}{6}$ and $\frac{5}{9}$ _____ _____ and _____

(3) $\frac{1}{4}$ and $\frac{3}{8}$ _____ _____ and _____

(4) $\frac{2}{3}$ and $\frac{3}{9}$ _____ _____ and _____

(B) $\frac{4}{15}$ and $\frac{2}{10}$ _____ _____ and _____

(1) $\frac{1}{9}$ and $\frac{4}{6}$ _____ _____ and _____

(2) $\frac{5}{8}$ and $\frac{1}{12}$ _____ _____ and _____

(3) $\frac{5}{7}$ and $\frac{3}{5}$ _____ _____ and _____

(4) $\frac{1}{9}$ and $\frac{3}{8}$ _____ _____ and _____

(C) $\frac{1}{24}$ and $\frac{3}{8}$ _____ _____ and _____

(1) $\frac{3}{5}$ and $\frac{2}{11}$ _____ _____ and _____

(2) $\frac{7}{14}$ and $\frac{1}{4}$ _____ _____ and _____

(3) $\frac{3}{20}$ and $\frac{1}{5}$ _____ _____ and _____

(4) $\frac{3}{9}$ and $\frac{2}{27}$ _____ _____ and _____

LEAST COMMON DENOMINATOR

Worksheet #14

Name_____ Date_____

Find the least common denominator and rename the fractions.

		L.C.D.		
(1)	$\frac{2}{6}$ and $\frac{7}{8}$	_____	_____ and _____	
(2)	$\frac{3}{5}$ and $\frac{6}{15}$	_____	_____ and _____	
(3)	$\frac{8}{10}$ and $\frac{5}{6}$	_____	_____ and _____	
(4)	$\frac{9}{11}$ and $\frac{2}{3}$	_____	_____ and _____	
(5)	$\frac{6}{13}$ and $\frac{2}{7}$	_____	_____ and _____	
(6)	$\frac{4}{9}$ and $\frac{3}{6}$	_____	_____ and _____	
(7)	$\frac{7}{15}$ and $\frac{1}{3}$	_____	_____ and _____	
(8)	$\frac{3}{4}$ and $\frac{7}{12}$	_____	_____ and _____	
(9)	$\frac{6}{9}$ and $\frac{3}{7}$	_____	_____ and _____	
(10)	$\frac{8}{14}$ and $\frac{3}{8}$	_____	_____ and _____	

LEAST COMMON DENOMINATOR

Worksheet #15

Name_____ Date_____

Find the least common denominator and rename the fractions.

		L.C.D.		
(1)	$\frac{6}{8}$ and $\frac{1}{3}$	_____	_____ and _____	
(2)	$\frac{9}{10}$ and $\frac{4}{6}$	_____	_____ and _____	
(3)	$\frac{5}{7}$ and $\frac{3}{4}$	_____	_____ and _____	
(4)	$\frac{8}{15}$ and $\frac{2}{5}$	_____	_____ and _____	
(5)	$\frac{9}{12}$ and $\frac{5}{8}$	_____	_____ and _____	
(6)	$\frac{7}{18}$ and $\frac{2}{3}$	_____	_____ and _____	
(7)	$\frac{12}{15}$ and $\frac{4}{5}$	_____	_____ and _____	
(8)	$\frac{6}{13}$ and $\frac{2}{5}$	_____	_____ and _____	
(9)	$\frac{5}{8}$ and $\frac{12}{17}$	_____	_____ and _____	
(10)	$\frac{9}{21}$ and $\frac{5}{8}$	_____	_____ and _____	

LEAST COMMON DENOMINATOR

Worksheet #16

Name_____ Date_____

Find the least common denominator and rename the fractions.

		L.C.D.		
(1)	$\frac{5}{8}$ and $\frac{3}{4}$	_____	_____ and _____	
(2)	$\frac{10}{15}$ and $\frac{4}{10}$	_____	_____ and _____	
(3)	$\frac{2}{3}$ and $\frac{7}{16}$	_____	_____ and _____	
(4)	$\frac{4}{5}$ and $\frac{6}{30}$	_____	_____ and _____	
(5)	$\frac{5}{8}$ and $\frac{9}{12}$	_____	_____ and _____	
(6)	$\frac{2}{12}$ and $\frac{11}{17}$	_____	_____ and _____	
(7)	$\frac{3}{5}$ and $\frac{7}{11}$	_____	_____ and _____	
(8)	$\frac{3}{8}$ and $\frac{7}{18}$	_____	_____ and _____	
(9)	$\frac{5}{9}$ and $\frac{7}{12}$	_____	_____ and _____	
(10)	$\frac{4}{7}$ and $\frac{2}{15}$	_____	_____ and _____	

LEAST COMMON DENOMINATOR

Worksheet #17

Name_____ Date_____

Find the least common denominator and rename the fractions.

		L.C.D.		
(1)	$\frac{8}{12}$ and $\frac{7}{8}$	_____	_____ and _____	
(2)	$\frac{4}{9}$ and $\frac{3}{16}$	_____	_____ and _____	
(3)	$\frac{13}{16}$ and $\frac{2}{3}$	_____	_____ and _____	
(4)	$\frac{5}{7}$ and $\frac{11}{12}$	_____	_____ and _____	
(5)	$\frac{6}{8}$ and $\frac{4}{7}$	_____	_____ and _____	
(6)	$\frac{5}{23}$ and $\frac{1}{2}$	_____	_____ and _____	
(7)	$\frac{3}{15}$ and $\frac{8}{18}$	_____	_____ and _____	
(8)	$\frac{2}{7}$ and $\frac{4}{6}$	_____	_____ and _____	
(9)	$\frac{10}{13}$ and $\frac{14}{17}$	_____	_____ and _____	
(10)	$\frac{11}{20}$ and $\frac{9}{14}$	_____	_____ and _____	

LEAST COMMON DENOMINATOR

Worksheet #18

Name_____ Date_____

Find the least common denominator and rename the fractions.

		L.C.D.		
(1)	$\frac{1}{2}$ and $\frac{3}{5}$	_____	_____ and _____	
(2)	$\frac{2}{9}$ and $\frac{1}{16}$	_____	_____ and _____	
(3)	$\frac{3}{17}$ and $\frac{1}{8}$	_____	_____ and _____	
(4)	$\frac{3}{7}$ and $\frac{1}{49}$	_____	_____ and _____	
(5)	$\frac{1}{3}$ and $\frac{4}{13}$	_____	_____ and _____	
(6)	$\frac{1}{12}$ and $\frac{2}{5}$	_____	_____ and _____	
(7)	$\frac{3}{8}$ and $\frac{7}{64}$	_____	_____ and _____	
(8)	$\frac{2}{9}$ and $\frac{7}{27}$	_____	_____ and _____	
(9)	$\frac{3}{14}$ and $\frac{7}{30}$	_____	_____ and _____	
(10)	$\frac{2}{17}$ and $\frac{3}{10}$	_____	_____ and _____	

Worksheet #19

Name_____ Date_____

$\frac{8}{13} + \frac{5}{8}$	$\frac{5}{8} - \frac{1}{4}$	$\frac{2}{3} + \frac{3}{4}$	$\frac{2}{3} - \frac{7}{16}$	$\frac{7}{9} + \frac{2}{4}$
$\frac{1}{5} - \frac{1}{6}$	$\frac{10}{11} + \frac{4}{7}$	$\frac{7}{8} - \frac{6}{7}$	$\frac{6}{15} + \frac{3}{8}$	$\frac{4}{9} - \frac{1}{5}$
$\frac{5}{7} + \frac{3}{4}$	$\frac{5}{8} - \frac{3}{10}$	$\frac{4}{5} + \frac{2}{9}$	$\frac{10}{13} - \frac{5}{8}$	$\frac{7}{8} + \frac{1}{8}$
$\frac{2}{5} - \frac{1}{10}$	$\frac{9}{10} + \frac{4}{5}$	$\frac{2}{3} - \frac{1}{9}$	$\frac{8}{21} + \frac{5}{8}$	$\frac{9}{15} - \frac{1}{20}$

Worksheet #20

Name_____ Date_____

$\frac{1}{2} + \frac{2}{3}$	$\frac{11}{16} - \frac{1}{8}$	$\frac{13}{18} + \frac{1}{5}$	$\frac{9}{13} - \frac{2}{3}$	$\frac{2}{7} + \frac{3}{14}$
$\frac{6}{7} - \frac{1}{5}$	$\frac{3}{8} + \frac{7}{10}$	$\frac{4}{9} - \frac{1}{8}$	$\frac{9}{15} + \frac{8}{21}$	$\frac{1}{2} - \frac{5}{17}$
$\frac{17}{20} + \frac{3}{8}$	$\frac{11}{12} - \frac{1}{5}$	$\frac{4}{11} + \frac{1}{3}$	$\frac{7}{16} - \frac{1}{4}$	$\frac{5}{7} + \frac{6}{13}$
$\frac{3}{5} - \frac{2}{15}$	$\frac{7}{10} + \frac{2}{3}$	$\frac{5}{6} - \frac{1}{2}$	$\frac{2}{5} + \frac{7}{15}$	$\frac{9}{11} - \frac{4}{5}$

Worksheet #21

Step 1

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(1) 3/8 and 1/16 _____

(2) 2/5 and 7/15 _____

(3) 5/6 and 11/18 _____

(4) 2/3 and 4/9 _____

(5) 7/8 and 19/24 _____

(6) 9/16 and 3/4 _____

(7) 11/12 and 17/36 _____

(8) 4/11 and 15/66 _____

(9) 1/4 and 5/24 _____

(10) 7/27 and 8/9 _____

Worksheet #22

Step 1

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(1) 4/5 and 10/35 _____

(2) 2/9 and 14/72 _____

(3) 2/3 and 5/9 _____

(4) 3/4 and 9/16 _____

(5) 1/2 and 7/12 _____

(6) 4/7 and 4/63 _____

(7) 2/10 and 3/40 _____

(8) 3/8 and 2/48 _____

(9) 1/6 and 15/42 _____

(10) 1/9 and 2/27 _____

Worksheet #23

Step 2

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(1) 1/6 and 1/4 _____

(2) 2/3 and 4/7 _____

(3) 6/10 and 1/7 _____

(4) 8/16 and 2/3 _____

(5) 5/8 and 3/7 _____

(6) 3/14 and 1/6 _____

(7) 7/9 and 2/5 _____

(8) 5/6 and 1/5 _____

(9) 10/17 and 2/3 _____

(10) 3/8 and 1/3 _____

Worksheet #24

Step 2

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(1) 3/16 and 5/6 _____

(2) 4/7 and 2/15 _____

(3) 3/10 and 4/15 _____

(4) 1/10 and 5/12 _____

(5) 1/16 and 3/12 _____

(6) 3/15 and 3/6 _____

(7) 2/9 and 1/6 _____

(8) 5/12 and 3/7 _____

(9) 5/22 and 1/3 _____

(10) 3/5 and 7/12 _____

Worksheet #25

Step 3

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(1) 4/9 and 5/13 _____

(2) 7/15 and 3/8 _____

(3) 3/4 and 13/19 _____

(4) 2/27 and 1/12 _____

(5) 8/13 and 5/6 _____

(6) 15/16 and 8/9 _____

(7) 6/21 and 1/4 _____

(8) 5/8 and 1/9 _____

(9) 4/17 and 6/19 _____

(10) 3/10 and 11/12 _____

Worksheet #26

Step 3

Name_____ Date_____

Find the least common denominator and rename the fractions.

L.C.D.

(1) 2/8 and 4/13 _____

(2) 4/7 and 3/25 _____

(3) 1/16 and 2/5 _____

(4) 4/11 and 2/9 _____

(5) 3/14 and 7/30 _____

(6) 1/9 and 3/25 _____

(7) 2/17 and 3/10 _____

(8) 1/19 and 3/24 _____

(9) 3/4 and 6/25 _____

(10) 1/13 and 7/8 _____

LEAST COMMON DENOMINATOR

FINAL TEST

Name_____ Date_____

Find the least common denominator and rename the fractions.

(1) $\frac{5}{6}$ and $\frac{3}{7}$ _____ _____ and _____

(2) $\frac{4}{5}$ and $\frac{1}{2}$ _____ _____ and _____

(3) $\frac{3}{4}$ and $\frac{2}{8}$ _____ _____ and _____

(4) $\frac{2}{10}$ and $\frac{1}{3}$ _____ _____ and _____

(5) $\frac{3}{7}$ and $\frac{4}{8}$ _____ _____ and _____

(6) $\frac{1}{6}$ and $\frac{5}{8}$ _____ _____ and _____

(7) $\frac{3}{8}$ and $\frac{5}{16}$ _____ _____ and _____

(8) $\frac{8}{11}$ and $\frac{1}{6}$ _____ _____ and _____

(9) $\frac{6}{20}$ and $\frac{3}{4}$ _____ _____ and _____

(10) $\frac{5}{9}$ and $\frac{2}{7}$ _____ _____ and _____

KEYS

LEAST COMMON DENOMINATOR

Worksheet #1

(1)	12	(6)	18
(2)	10	(7)	20
(3)	12	(8)	14
(4)	8	(9)	4
(5)	21	(10)	15

Worksheet #2

(1)	30	(6)	36
(2)	20	(7)	28
(3)	12	(8)	36
(4)	30	(9)	30
(5)	24	(10)	48

Worksheet #3

(1)	35	(6)	66
(2)	36	(7)	91
(3)	56	(8)	72
(4)	24	(9)	70
(5)	63	(10)	42

Worksheet #4

(1)	18	(6)	20
(2)	66	(7)	12
(3)	30	(8)	10
(4)	360	(9)	52
(5)	7	(10)	48

Worksheet #5

(1)	24	(6)	36
(2)	20	(7)	21
(3)	25	(8)	15
(4)	6	(9)	18
(5)	24	(10)	312

Worksheet #6

(1)	9	(6)	36
(2)	72	(7)	18
(3)	45	(8)	18
(4)	12	(9)	77
(5)	70	(10)	20

Worksheet #7

(1)	8	(6)	18
(2)	42	(7)	21
(3)	152	(8)	63
(4)	72	(9)	81
(5)	24	(10)	7

Worksheet #8

(1)	27	(6)	56
(2)	100	(7)	28
(3)	64	(8)	180
(4)	66	(9)	48
(5)	45	(10)	35

Worksheet #9

Step 1, Prob. B - 12, 5/12 and 9/12
Step 2, Prob. B - 24, 9/24 and 4/24
Step 3, Prob. B - 55, 10/55 and 11/55

Worksheet #10

(1) 15, 7/15 and 10/15
(2) 14, 6/14 and 2/14
(3) 12, 8/12 and 9/12
(4) 20, 6/20 and 10/20
(5) 63, 9/63 and 21/63
(6) 20, 3/20 and 12/20
(7) 24, 1/24 and 20/24
(8) 30, 15/30 and 10/30
(9) 21, 4/21 and 9/21
(10) 30, 20/30 and 1/30

Worksheet #11

(1) 36, 22/36 and 27/36
(2) 15, 6/15 and 6/15
(3) 18, 14/18 and 6/18
(4) 35, 5/35 and 21/35
(5) 15, 10/15 and 12/15
(6) 63, 21/63 and 18/63
(7) 8, 3/8 and 4/8
(8) 14, 6/14 and 7/14
(9) 24, 15/24 and 16/24
(10) 30, 10/30 and 9/30

Worksheet #12

(1) 45, 10/45 and 36/45
(2) 20, 15/20 and 8/20
(3) 21, 15/21 and 10/21
(4) 18, 8/18 and 9/18
(5) 56, 14/56 and 32/56
(6) 24, 21/24 and 20/24
(7) 30, 2/30 and 9/30
(8) 36, 27/36 and 20/36
(9) 35, 25/35 and 28/35
(10) 40, 32/40 and 35/40

Worksheet #13

(A) 72, 40/72 and 27/72
(1) 30, 25/30 and 18/30
(2) 18, 6/18 and 10/18
(3) 8, 2/8 and 3/8
(4) 9, 6/9 and 3/9

(B) 30, 8/30 and 6/30
(1) 18, 2/18 and 12/18
(2) 24, 15/24 and 2/24
(3) 35, 25/35 and 21/35
(4) 72, 8/72 and 27/72

(C) 24, 1/24 and 9/24
(1) 55, 33/55 and 10/55
(2) 28, 14/28 and 7/28
(3) 20, 3/20 and 4/20
(4) 27, 9/27 and 2/27

Worksheet #14
(1) 24, 8/24 and 21/24
(2) 15, 9/15 and 6/15
(3) 30, 24/30 and 25/30
(4) 33, 27/33 and 22/33
(5) 91, 42/91 and 26/91
(6) 18, 8/18 and 9/18
(7) 15, 7/15 and 5/15
(8) 12, 9/12 and 7/12
(9) 63, 42/63 and 27/63
(10) 112, 64/112 and 42/112

Worksheet #15
(1) 24, 18/24 and 8/24
(2) 30, 27/30 and 20/30
(3) 28, 20/28 and 21/28
(4) 15, 8/15 and 6/15
(5) 24, 18/24 and 15/24
(6) 18, 7/18 and 12/18
(7) 15, 12/15 and 12/15
(8) 65, 30/65 and 26/65
(9) 136, 85/136 and 96/136
(10) 168, 72/168 and 105/168

Worksheet #16
(1) 8, 5/8 and 6/8
(2) 30, 20/30 and 12/30
(3) 48, 32/48 and 21/48
(4) 30, 24/30 and 6/30
(5) 24, 15/24 and 18/24
(6) 204, 34/204 and 132/204
(7) 55, 33/55 and 35/55
(8) 144, 54/144 and 56/144
(9) 36, 20/36 and 21/36
(10) 105, 60/105 and 14/105

Worksheet #17
(1) 24, 16/24 and 21/24
(2) 144, 64/144 and 27/144
(3) 48, 39/48 and 32/48
(4) 84, 60/84 and 77/84
(5) 56, 42/56 and 32/56
(6) 46, 10/46 and 23/46
(7) 90, 18/90 and 40/90
(8) 42, 12/42 and 28/42
(9) 221, 170/221 and 182/221
(10) 140, 77/140 and 90/140

Worksheet #18
(1) 10, 5/10 and 6/10
(2) 144, 32/144 and 9/144
(3) 136, 24/136 and 17/136
(4) 49, 21/49 and 1/49
(5) 39, 13/39 and 12/39
(6) 60, 5/60 and 24/60
(7) 64, 24/64 and 7/64
(8) 27, 6/27 and 7/27
(9) 210, 45/210 and 49/210
(10) 170, 20/170 and 51/170

Worksheet #19
129/104 or 1 25/104
3/8
17/12 or 1 5/12
11/48
46/36 or 1 10/36 or 1 5/8
1/30
114/77 or 1 37/77
1/56
93/120 or 31/40
11/45
41/28 or 1 13/28
13/40
46/45 or 1 1/45
15/104
8/8 or 1
3/10
17/10 or 1 7/10
5/9
169/168 or 1 1/168
42/60 or 21/30

Worksheet #20
7/6 or 1 1/6
9/16
83/90
1/39
7/14 or 1/2
23/25
43/40 or 1 3/40
23/72
103/105
7/34
49/40 or 1 9/40
43/60
23/33
3/16
107/91 or 1 16/91
7/15
41/30 or 1 11/30
2/6 or 1/3
13/15
1/55

Worksheet #21

(1) 16	(2) 15	(3) 18
(4) 9	(5) 24	(6) 16
(7) 36	(8) 66	(9) 24
(10) 27		

Worksheet #22

(1) 35	(2) 72	(3) 9
(4) 16	(5) 12	(6) 63
(7) 40	(8) 48	(9) 42
(10) 27		

Worksheet #23

(1)	24	(2)	21	(3)	70
(4)	48	(5)	56	(6)	42
(7)	45	(8)	30	(9)	51
(10)	24				

Worksheet #24

(1)	48	(2)	105	(3)	30
(4)	60	(5)	48	(6)	30
(7)	18	(8)	84	(9)	66
(10)	60				

Worksheet #25

(1)	117	(6)	144
(2)	120	(7)	84
(3)	76	(8)	72
(4)	324	(9)	323
(5)	78	(10)	120

Worksheet #26

(1)	104	(6)	225
(2)	175	(7)	170
(3)	80	(8)	456
(4)	99	(9)	100
(5)	420	(10)	104

Final Test

(1)	42	(6)	24
(2)	10	(7)	16
(3)	8	(8)	66
(4)	30	(9)	20
(5)	56	(10)	63